

# Management of Attention Deficit Hyperactivity Disorder (ADHD) with Speech Delay in a 4-Year-Old Male with Herbo-mineral Intervention: A Case Report

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## ABSTRACT

**Background:** Attention Deficit Hyperactivity Disorder (ADHD) is a common neurodevelopmental disorder in children that is marked by inattention, hyperactivity, and impulsivity. Traditional management encompasses behavior therapy and psychostimulants, which have serious side effects. This case report reports on effective Ayurvedic treatment of a 4-year-old male patient with ADHD.

**Case Presentation:** A 4-year-old boy who was diagnosed with ADHD reported with typical symptoms such as lack of attention, hyperactivity, anger, and speech disorder. He was incapable of sentence construction and was poorly socialized.

**Intervention and Outcome:** An Ayurvedic regimen that included both internal medicine (Sarasvat Churna, Yogendra Rasa, Vatkulantak Rasa, Sarasvatarishta, Manasmitra Vatakam, Vani Ghritam capsules) and external supplements (Matra Basti with Mahanarayana Taila, Abhyanga with Mahamasha Taila). The patient was experiencing slight improvement in attention, social interaction and anger control by 15 days. The treatment was followed over a 4-month period, wherein all the core symptoms such as attention span, speech, social interaction, and behavior showed significant improvement, with the child now producing bisyllabic words.

**Conclusion:** This case indicates that a comprehensive Ayurvedic treatment plan using both internal and external interventions can be a safe and effective method in managing ADHD in children which leads to significant changes in cognitive, behavioral and developmental parameters.

**Keywords:** ADHD, Ayurveda, case report, child psychiatry, Manasmitra Vatakam, Matra Basti.

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## INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most prevalent neurodevelopmental

disorders of childhood in the world, with a combined prevalence of about 57% in children and adolescents [1]. The disorder is characterized as a chronic

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mechanism of inattention and/or hyperactivity-impulsivity, which interferes with functioning or development [2]. Its pathogenesis is complex and multifactorial, including genetic, environmental, as well as neurological factors.

Conventional therapy involves behavioral therapy, parent training, and stimulant (e.g., methylphenidate) or non-stimulant (e.g., atomoxetine) pharmacotherapy. Nevertheless, the occurrence of side effects such as loss of appetite, insomnia and growth retardation, are all real issues that cause concern on the part of the parents most of whom are now vigorously trying to find alternative or complementary medications [3].

In Ayurveda, the concept of ADHD is viewed as a disorder of the mind (*Manas*) and it involves the *Vata dosha*. Instability, lack of concentration, and inattention are symptoms that are mainly due to aggravated *Vata dosha* especially the *Prana* and *Udana Vata doshas* which control sensory perception, cognition, and speech. Also, high *Rajas* (the mental quality of activity and agitation) is important [4]. Recent studies have initiated research on Ayurvedic remedies in ADHD and evidence-based efficacy and safety information is urgently needed [5]. The present case report was prepared according to CARE guidelines [6] and it outlines

effective treatment of a young child with ADHD utilizing a multimodal Ayurvedic approach.

### CASE PRESENTATION

#### Patient Information

The parents of a 4-year-old male child presented to the Ayurvedic outpatient department on 10 July 2025 with complaints of his behavior and development. Six months earlier, a consulting pediatric specialist had diagnosed him with ADHD. His parents complained of hyperactivity to the extreme, lack of ability to sit up, poor attention, frequent anger outbreaks and tantrums as well as poor speech development (jargon speech, failure to construct simple sentences). He was not social, and liked to play on his own and had been thrown out of a playgroup due to disruptive behavior. He had an erratic appetite and disturbed sleep.

#### Clinical Findings

Upon inspection, the child was hyperactive and could not easily obey simple commands. He had a thin figure, but in the normal range of growth in his age (weight: 14.5 kg; height: 100 cm). There was poor eye contact. *Nadi* (pulse) evaluation revealed *Vata- Pittaja* dominance. No other abnormalities were observed.

#### Timeline

The clinical timeline of assessment and follow-up visits is summarized in Table 1.

**Table 1: Timeline of event**

Date	Event
10/07/2025	Initial presentation, history taking, Ayurvedic assessment
10/07/2025	Intensive phase: internal medications + daily external therapies
30/07/2025	First follow-up assessment
16/08/2025	Second follow-up assessment
02/09/2025	Third follow-up assessment
05/10/2025	Fourth follow-up assessment
12/11/2025	Final assessment for this report

#### Diagnostic Assessment

The diagnosis of ADHD was determined by history, parental reports of a developmental checklist, and physical examination, which is in line with DSM-5 criteria [2]. The Ayurvedic diagnosis explained the condition by the presence of *Vata* as the major cause of the instability of physical and mental health and *Pitta* as a secondary cause of anger.

#### Therapeutic Intervention

A comprehensive Ayurvedic treatment protocol was designed with dual aims: *Shodhana* (purification) and *Shamana* (pacifying) therapy. The internal medications administered are detailed in Table 2, while external therapies are presented in Table 3.

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**Table 2. Internal Medications (*Shamana Aushadhi*):**

Medication	Dose	Vehicle	Purpose & Mechanism
<i>Sarasvat Churna</i>	1 g twice daily	Honey	Classical <i>Medhya Rasayana</i> ; enhances memory and cognition through GABAergic modulation, acetylcholinesterase inhibition, and NGF upregulation [7, 9]
<i>Yogendra Rasa</i>	65 mg twice daily	Honey	Herbo-mineral formulation; exerts neuroprotective effects via anti-inflammatory and antioxidant mechanisms in neurological disorders [8]
<i>Vatkulantak Rasa</i>	65 mg twice daily	Honey	Corrects severe <i>Vata</i> disorders; stabilizes neuronal membranes and improves nerve conduction velocity
<i>Sarasvatarishta</i>	5 ml twice daily	Equal water (post-food)	Fermented nervine tonic; enhances synaptic plasticity and neurotransmitter balance
<i>Manasmitra Vatakam</i>	1 tablet (125 mg) twice daily	Milk	Contains 55+ herbs; 34 brain-penetrating compounds (chrysin, quercetin, galangin) inhibit AChE and BACE1, reduce neuroinflammation [11]
<i>Vani Ghritam (capsule)</i>	1 capsule (250 mg) twice daily	Warm milk	Medicated ghee; targets speech articulation centers via <i>Udana Vata</i> regulation and neurotrophic support

**Table 3. External Therapies (*Bahya Chikitsa*) with purification therapy (*Shodhana*):**

Therapy	Agent	Duration	Frequency	Purpose & Mechanism
<i>Abhyanga (full body massage)</i>	<i>Mahamasha Taila</i>	20 minutes	Daily	Nourishes muscles and nervous system; reduces sympathetic overactivity; calms <i>Vata</i> through mechanoreceptor stimulation
<i>Shiropichu (scalp oil retention)</i>	<i>Jyotishmati Taila</i>	30 minutes	Daily	Enhances cognitive function via transcranial absorption; clinical trial registered for mild cognitive impairment (CTRI/2019/08/020980) [10]
<i>Matra Basti (therapeutic oil enema)</i>	<i>Mahanarayana Taila (15 ml)</i>	-	Daily for 15 days	Key <i>Vata</i> -pacifying procedure; oil spreads from <i>Pakwashaya</i> (colon) through <i>Sira</i> and <i>Dhamani</i> to all <i>Vata</i> subtypes [9]; research confirms efficacy in <i>Vata</i> -predominant conditions [12]

**Follow-up and Outcomes**

The patient was followed up on five times over approximately four months. Progressive improvement was observed in attention span, speech

development, social interaction, anger management, appetite, and sleep. Detailed clinical observations are summarized in Table 4. No adverse effects were reported at any point during treatment.

**Table 4: Progression of Symptoms during Follow-up Period**

Date	Attention & Hyperactivity	Speech & Communication	Social Interaction	Behaviour (Anger Issues)	Appetite & Sleep
<b>Initial (10/07/2025)</b>	Extremely hyperactive, unable to sit still, poor concentration	Jargon speech, no simple sentences	Poor eye contact, prefers to play alone	Frequent and intense tantrums, significant anger	Variable appetite, disturbed sleep

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<b>First follow-up (30/07/2025)</b>	Slightly stable; can focus on a task for a few minutes	Clear monosyllabic words ("ma," "pa," "ba")	Slightly increased; occasional eye contact	Reduced frequency and intensity of anger issues	Appetite normalized
<b>Second follow-up (16/08/2025)</b>	Improved focus; can sit for 15–20 minutes for coloring	Same as previous	Interacts briefly with family; plays alongside other children	Tantrums less frequent and more manageable	Sleep more peaceful
<b>Third follow-up (02/09/2025)</b>	Attention span continues to improve; follows simple instructions	Vocabulary expanding; 2–3-word phrases	Initiates play with siblings; shows interest in peers	Anger now more age-appropriate and situational	Appetite and sleep normal
<b>Fourth follow-up (05/10/2025)</b>	Good focus; enjoys puzzles and stories for 10–12 minutes	Attempting short, simple sentences of 3–4 words	Successfully re-enrolled in playschool; adjusting well	Occasional mild frustration but no aggressive outbursts	Maintaining normalcy
<b>Final assessment (12/11/2025)</b>	Significant improvement; age-appropriate attention span	Able to form short, simple sentences; much more communicative	Active participation in group activities; good peer interaction	Anger issues significantly reduced; behavior age-appropriate	Normal and on track for age

### DISCUSSION

This case shows that a comprehensive Ayurvedic approach can be effective in treating complex neurodevelopmental disorders like ADHD. The treatment plan was aimed at fixing the underlying imbalance of *Vata dosha* and mental *Gunas* (qualities) rather than focusing on the symptoms. This is in line with the current demands of methodologically rigorous investigations to determine the scientific basis of Ayurveda in neurodevelopmental disorders [5].

*Manasmitra Vatakam* (MMV) is a special medication among the internal medications. The Journal of Ethnopharmacology published a 2025 study that employed a liquid chromatography-mass spectrometry method to study rat brain tissue following oral administration of MMV [11]. The researchers were able to identify 34 phytoconstituents that were able to cross the intestinal barrier as well as the blood-brain barrier. Computational docking identified eight of these compounds such as chrysin, quercetin, galangin and naringenin to have high binding affinity to acetylcholinesterase (AChE) and beta-secretase 1 (BACE1) which are two enzymes relevant to neurodegeneration and cognitive decline. Molecular dynamic studies exhibited the most stable interaction of Galangin with AChE [11]. In the case

of our patient, the multi-targeted mechanisms were probably important in the achievement of improvements in attention, memory, and behavior.

*Sarasvat Churna* has a combination of nootropic herbs that have been well researched, such as *Bacopa monnieri* (Brahmi), *Convolvulum pluricaulis* (*Shankhapushpi*), *Acorus calamus* (*Vacha*), and *Withania somnifera* (*Ashwagandha*) [9]. The analysis of *Shankhapushpi* through network pharmacology has revealed the involvement of dopaminergic and serotonergic pathway modulation in its memory-enhancing effect [7]. The same study showed that the mitogen-activated protein kinase (MAPK) cascade and activity of histone deacetylase (HDAC) mediate nootropic effects [7]. In the case of a child with ADHD, where dopaminergic dysregulation is well-studied, such mechanisms present a logical basis of symptom amelioration. *Sarasvatarishta* is an active fermented preparation that has a higher bioavailability of these active principles with added effects of nervine tonic.

Recently, a herbo-mineral preparation called *Yogendra Rasa* has been demonstrated to be effective in neurological outcomes in stroke patients, with reported positive changes in National Institutes of Health Stroke Scale scores [8]. Although the exact mechanism is yet to be clarified, herbo-mineral preparations in Ayurveda are believed to produce

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synergistic actions by way of trace mineral bioavailability and phytochemical stimulation of neuronal repair mechanisms. *Vatkulantak Rasa* itself is aimed at the treatment of extreme Vata disorders, probably due to its membrane-stabilizing and nerve conduction-optimizing effects.

To specifically deal with speech delay of the patient, *Vani Ghritam*. Ayurvedic ghee preparations are considered to directly target the nervous tissue with active principles because ghee is lipophilic, and thus it can penetrate the blood-brain barrier. The formula seeks to control the *Udana Vata*, the sub-*dosha* that is in charge of speech production and articulation.

The logic behind *Matra Basti* using *Mahanarayana Taila* needs the knowledge of the classical Ayurvedic anatomy. *Vata dosha* is believed to be the chief seat in the *Pakwashaya* (colon). *Vata* then spreads over the body through *Sira* (veins) and *Dhamani* (arteries) [9]. *Medaid oil* is placed in *Matra Basti* right in this location and distributed systemically. The *veerya* (potency) of the oil initially enters *Apana Vata* (which removes and moves downwards) and then travels through the subtypes of *Samana*, *Vyana*, *Udana*, and *Prana Vata* [9]. *Mahanarayana Taila* has been shown to have a certain efficacy in *Vata*-dominant disorders; in a comparative clinical trial it was found to be more effective than *Sahacharadi Taila* in the management of *Vata* symptoms such as pain (*Ruk*), tremor (*Toda*), numbness and burning sensation [12]. In the case of our patient, this systemic *Vata* pacification was probably one of the factors that led to the minimization of hyperactivity and enhancement of stability.

Cognitive impairment has been studied in *Jyotishmati Taila* (*Celastrus paniculatus*). It is being tested in a registered clinical trial (CTRI/2019/08/020980) to determine its efficacy in mild cognitive impairment in elderly individuals [10]. The *Shiropichu* process that keeps oil on the scalp 30 minutes permits transcranial absorption, which could possibly supply active principles into the cerebral circulation. Local effects of internal medicines and *Basti* are complemented by this localized approach.

The progressive increase in words that we experienced in the first four months of monosyllabic words at 15 days to simple sentences at the end assessment is congruent with the Ayurvedic principle that deep-seated disorders of *Vata* need a prolonged treatment. The fact that there were no side effects during the treatment period attests to the

safety of this multimodal method in case of its application under professional control.

### Limitations

There are a number of limitations to this report. As a single case, the outcomes cannot be generalized. This was a clinical assessment; we were not able to administer standard psychometric tests to assess improvements. Future studies should provide evidence of the findings using larger sample sizes and controlled designs [5,7].

### PATIENT PERSPECTIVE

The patient's parents expressed great satisfaction and relief regarding the outcome of the treatment. They shared that they had been deeply concerned about their son's future, as his condition had significantly affected his behavior, communication, and social development. They were also apprehensive about conventional treatment options because of the potential side effects of long-term medication use. They stated that with the help of Ayurvedic treatment, their son showed remarkable improvement and gradually became a happier, calmer, and more sociable child. They further mentioned that he now enjoys going to school and participating in activities with other children.

### CONCLUSION

This case suggests that a multimodal Ayurvedic treatment regimen comprising *Medhya Rasayana* formulations such as *Sarasvat Churna* and *Manasmitra Vatakam*, herbo-mineral preparations including *Yogendra Rasa* and *Vatkulantak Rasa*, along with external therapies such as *Matra Basti* and *Shiropichu*, may serve as a safe and effective complementary intervention in the management of ADHD. Noticeable improvements were observed in cognitive function, behavior, speech development, and social interaction. These encouraging findings highlight the need for further systematic investigation through well-designed controlled clinical trials to evaluate the efficacy and safety of such integrative Ayurvedic approaches.

### INFORMED CONSENT

The parents of the patient gave informed consent regarding the publication of this case report in writing.

### CONFLICT OF INTEREST

No conflicts of interest.

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### ABBREVIATIONS

Abbreviation	Full Form
ADHD	Attention Deficit Hyperactivity Disorder
AChE	Acetylcholinesterase
BACE1	Beta-secretase 1
BBB	Blood-brain barrier
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, 5th Edition
CARE	CAse REport guidelines
LC-MS	Liquid chromatography-mass spectrometry
MMV	Manasmitra Vatakam

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